

What is claimed is:

1. Optical glass comprising, in a molar percent,
30 to 45 percent of B_2O_3 ,
2 to 15 percent of SiO_2 ,
10 to 20 percent of La_2O_3 ,
1 to 10 percent of TiO_2 ,
10 to 30 percent of ZnO ,
2 to 15 percent of Li_2O ,
higher than 0 percent and 10 percent or less of WO_3 ,
0 to 15 percent of Nb_2O_5 , and
0 to 10 percent of ZrO_2 ,
wherein the total amount of the B_2O_3 , SiO_2 , La_2O_3 , TiO_2 , ZnO , Li_2O ,
 WO_3 , Nb_2O_5 and ZrO_2 is higher than 95 percent, and the glass exhibits a
refractive index (nd) in a range of 1.75 to 1.87 and an Abbé number (νd) in
a range of 80 to 45.
2. The optical glass according to claim 1, wherein the glass exhibits a
transition temperature (T_g) of 580 °C or less.
3. Optical glass comprising essential components of B_2O_3 , SiO_2 , La_2O_3 ,
 TiO_2 , ZnO , Li_2O , and WO_3 and optional components of Nb_2O_5 and ZrO_2 ,
wherein the total amount of the B_2O_3 , SiO_2 , La_2O_3 , TiO_2 , ZnO , Li_2O ,
 WO_3 , Nb_2O_5 and ZrO_2 is higher than 95 molar percent,
the glass exhibits a refractive index (nd) in a range of 1.75 to 1.87,
and an Abbé number (νd) in a range of 30 to 45,
the glass exhibits properties, based on a thickness of 10 mm, in the
spectral transmittance of wavelengths of 280 to 700 nm, that the
wavelength, at which a 80 percent spectral transmittance is exhibited, is
440 nm or less, and the wavelength, at which a 5 percent spectral

transmittance is exhibited, is 350 nm or less, and

the glass exhibits a glass transition temperature (T_g) of 580 °C or less.

4. A precision press molding preform comprised of the optical glass according to claim 1.

5. A precision press molding preform comprised of the optical glass according to claim 2.

6. A precision press molding preform comprised of the optical glass according to claim 3.

7. The precision press molding preform according to claim 4, wherein entire surface of the preform has been formed by solidifying melting glass as it is.

8. The precision press molding preform according to claim 5, wherein entire surface of the preform has been formed by solidifying melting glass as it is.

9. The precision press molding preform according to claim 6, wherein entire surface of the preform has been formed by solidifying melting glass as it is.

10. The precision press molding preform according to claim 4, wherein entire surface of the preform is comprised of a free surface.

11. The precision press molding preform according to claim 5, wherein

entire surface of the preform is comprised of a free surface.

12. The precision press molding preform according to claim 6, wherein entire surface of the preform is comprised of a free surface.

13. A method of manufacturing a precision press molding preform, wherein a prescribed weight of melting glass is separated from a melting glass flow flowing out from an outflow pipe to form a precision press molding preform comprised of the optical glass according to claim 1.

14. A method of manufacturing a precision press molding preform, wherein a prescribed weight of melting glass is separated from a melting glass flow flowing out from an outflow pipe to form a precision press molding preform comprised of the optical glass according to claim 2.

15. A method of manufacturing a precision press molding preform, wherein a prescribed weight of melting glass is separated from a melting glass flow flowing out from an outflow pipe to form a precision press molding preform comprised of the optical glass according to claim 3.

16. An optical element comprised of the optical glass according to claim 1.

17. An optical element comprised of the optical glass according to claim 2.

18. An optical element comprised of the optical glass according to claim 3.

19. An optical element obtained by precision press molding the precision press molding preform according to claim 4.
20. An optical element obtained by precision press molding the precision press molding preform according to claim 5.
21. An optical element obtained by precision press molding the precision press molding preform according to claim 6.
22. An optical element obtained by precision press molding the precision press molding preform according to claim 7.
23. An optical element obtained by precision press molding the precision press molding preform according to claim 8.
24. An optical element obtained by precision press molding the precision press molding preform according to claim 9.
25. An optical element obtained by precision press molding the precision press molding preform according to claim 10.
26. An optical element obtained by precision press molding the precision press molding preform according to claim 11.
27. An optical element obtained by precision press molding the precision press molding preform according to claim 12.
28. An optical element obtained by precision press molding a preform formed by the method of manufacturing according to claim 13.

29. An optical element obtained by precision press molding a preform formed by the method of manufacturing according to claim 14.

30. An optical element obtained by precision press molding a preform formed by the method of manufacturing according to claim 15.

31. A method of manufacturing an optical element in which a precision press molding preform is heated, softened and precision press molded to form a glass optical element, wherein the precision press molding preform according to claim 4 is employed as the preform.

32. A method of manufacturing an optical element in which a precision press molding preform is heated, softened and precision press molded to form a glass optical element, wherein the precision press molding preform according to claim 5 is employed as the preform.

33. A method of manufacturing an optical element in which a precision press molding preform is heated, softened and precision press molded to form a glass optical element, wherein the precision press molding preform according to claim 6 is employed as the preform.

34. A method of manufacturing an optical element in which a precision press molding preform is heated, softened and precision press molded to form a glass optical element, wherein the precision press molding preform according to claim 7 is employed as the preform.

35. A method of manufacturing an optical element in which a precision press molding preform is heated, softened and precision press molded to

form a glass optical element, wherein the precision press molding preform according to claim 8 is employed as the preform.

36. A method of manufacturing an optical element in which a precision press molding preform is heated, softened and precision press molded to form a glass optical element, wherein the precision press molding preform according to claim 9 is employed as the preform.

37. A method of manufacturing an optical element in which a precision press molding preform is heated, softened and precision press molded to form a glass optical element, wherein the precision press molding preform according to claim 10 is employed as the preform.

38. A method of manufacturing an optical element in which a precision press molding preform is heated, softened and precision press molded to form a glass optical element, wherein the precision press molding preform according to claim 11 is employed as the preform.

39. A method of manufacturing an optical element in which a precision press molding preform is heated, softened and precision press molded to form a glass optical element, wherein the precision press molding preform according to claim 12 is employed as the preform.

40. A method of manufacturing an optical element in which a precision press molding preform is heated, softened and precision press molded to form a glass optical element, wherein as the preform, a preform formed by the method of manufacturing according to claim 13 is employed.

41. A method of manufacturing an optical element in which a precision

press molding preform is heated, softened and precision press molded to form a glass optical element, wherein as the preform, a preform formed by the method of manufacturing according to claim 14 is employed.

42. A method of manufacturing an optical element in which a precision press molding preform is heated, softened and precision press molded to form a glass optical element, wherein as the preform, a preform formed by the method of manufacturing according to claim 15 is employed.

43. The method of manufacturing an optical element according to claim 40, wherein the heating of the precision press molding preform is conducted by introducing the precision press molding preform into a pressing mold and then heating the preform together with the pressing mold.

44. The method of manufacturing an optical element according to claim 41, wherein the heating of the precision press molding preform is conducted by introducing the precision press molding preform into a pressing mold and then heating the preform together with the pressing mold.

45. The method of manufacturing an optical element according to claim 42, wherein the heating of the precision press molding preform is conducted by introducing the precision press molding preform into a pressing mold and then heating the preform together with the pressing mold.

46. The method of manufacturing an optical element according to claim 43, wherein the precision press molding preform is preheated prior to being introduced into the pressing mold.

47. The method of manufacturing an optical element according to claim

44, wherein the precision press molding preform is preheated prior to being introduced into the pressing mold.

48. The method of manufacturing an optical element according to claim 45, wherein the precision press molding preform is preheated prior to being introduced into the pressing mold.